

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P332077-940

Luminaire Tested: **S123DIP-S1165D1025U940-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332077-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S1165D1025U940-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7635.6 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

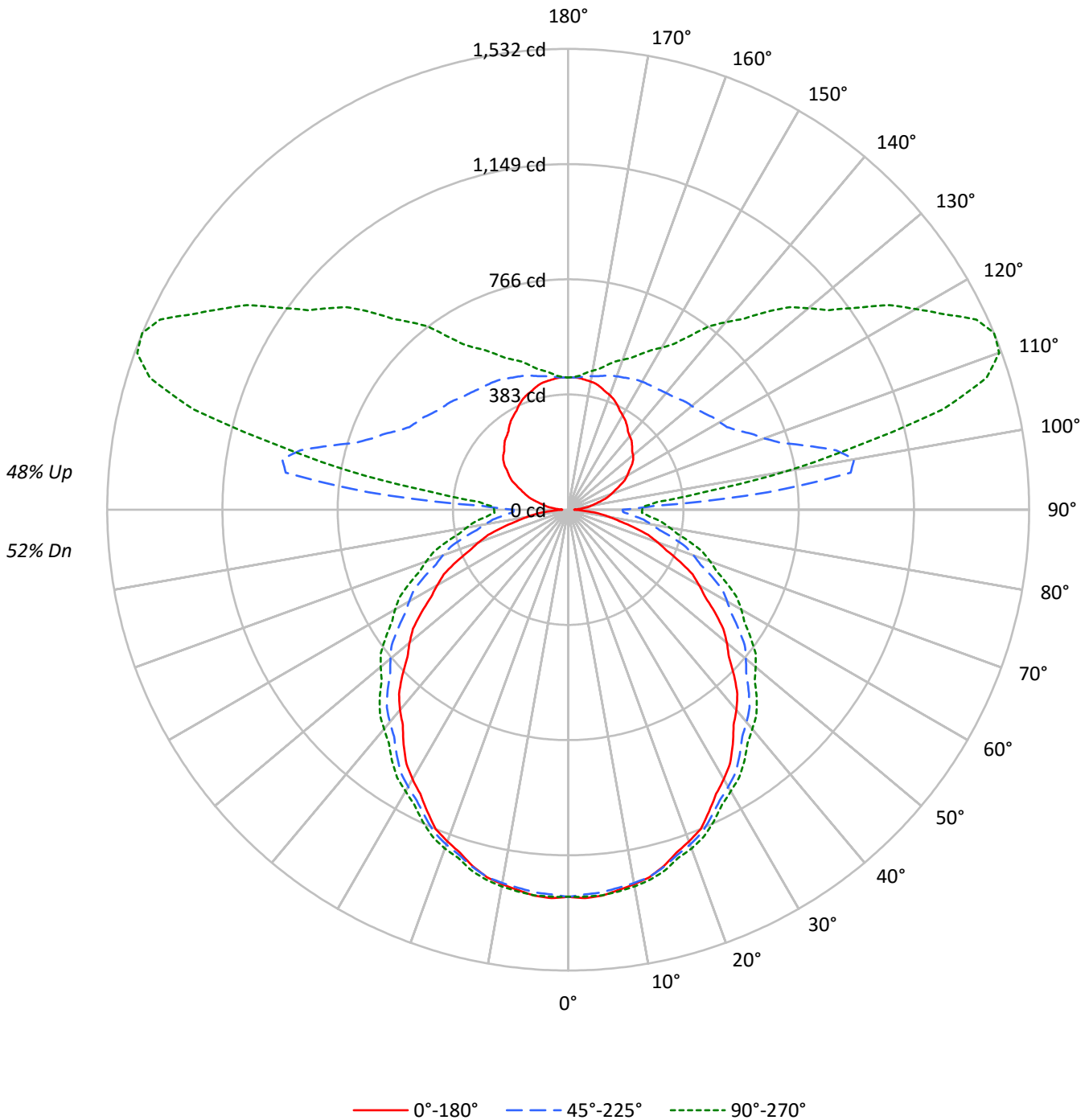
Input Watts (W): 66.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58	52
1	97	92	88	84	90	85	82	78	72	70	67	60	58	57	49	48	47	41
2	88	80	73	68	81	74	68	63	63	58	55	52	49	46	43	41	38	34
3	80	70	62	56	74	65	58	52	55	50	45	46	42	39	38	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38	41	36	33	33	30	28	24
5	67	55	46	40	61	51	43	38	43	38	33	36	32	28	30	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	24	21	18
7	57	44	36	30	52	41	34	29	35	29	25	30	25	22	25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20	25	21	17	21	17	15	13
10	46	34	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13850	13850	13850
5°	13894	13501	13509
10°	13769	13190	13124
15°	13592	12837	12705
20°	13338	12435	12243
25°	13025	11969	11757
30°	12705	11553	11264
35°	12344	11111	10871
40°	12002	10709	10450
45°	11622	10323	10113
50°	11245	9942	9744
55°	10831	9553	9410
60°	10426	9156	9068
65°	10013	8733	8661
70°	9389	8257	8243
75°	8597	7713	7819
80°	7695	7181	7334
85°	6853	6811	7053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	122.0	1.6
10°-20°	347.7	4.6
20°-30°	520.1	6.8
30°-40°	621.1	8.1
40°-50°	649.8	8.5
50°-60°	609.8	8.0
60°-70°	509.3	6.7
70°-80°	364.4	4.8
80°-90°	220.7	2.9
90°-100°	381.0	5.0
100°-110°	793.1	10.4
110°-120°	748.5	9.8
120°-130°	581.9	7.6
130°-140°	445.8	5.8
140°-150°	323.6	4.2
150°-160°	223.0	2.9
160°-170°	131.0	1.7
170°-180°	42.6	0.6
0°-30°	989.8	13.0
0°-40°	1610.9	21.1
0°-60°	2870.5	37.6
0°-90°	3964.9	51.9
90°-120°	1922.7	25.2
90°-150°	3274.0	42.9
90°-180°	3671.0	48.1
0°-180°	7635.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1287	1287	1287	1287	1287	
5°	1288	1285	1277	1287	1287	122
15°	1226	1230	1229	1242	1242	345
25°	1107	1121	1126	1143	1144	510
35°	953	975	994	1014	1020	596
45°	779	813	848	874	886	601
55°	594	641	691	727	740	532
65°	411	466	527	568	583	406
75°	223	289	359	403	422	238
85°	69	139	213	259	275	72
90°	20	98	181	229	246	14
95°	46	169	667	335	300	45
105°	114	199	821	1394	1289	121
115°	190	253	622	1307	1496	188
125°	258	306	556	999	1170	229
135°	300	357	521	803	929	232
145°	340	389	498	636	705	213
155°	385	416	482	547	570	177
165°	421	433	461	489	498	119
175°	439	439	442	449	448	42
180°	440	440	440	440	440	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1292.4	1291.6	1290.8	1290.1	1289.3	1288.0	1286.0	1284.0	1282.0	1280.1	1282.0
5°	1288.2	1287.5	1286.9	1286.3	1285.7	1284.4	1282.5	1280.7	1278.8	1276.9	1279.4
7.5°	1275.5	1275.7	1275.8	1275.9	1276.0	1275.2	1273.4	1271.6	1269.8	1267.9	1271.0
10°	1264.4	1265.0	1265.6	1266.2	1266.9	1266.3	1264.8	1263.2	1261.7	1260.1	1263.2
12.5°	1250.9	1251.7	1252.6	1253.5	1254.4	1254.3	1253.2	1252.1	1251.1	1250.0	1252.9
15°	1226.5	1227.4	1228.3	1229.3	1230.2	1230.6	1230.2	1229.9	1229.6	1229.3	1232.4
17.5°	1195.6	1197.5	1199.4	1201.2	1203.1	1204.0	1203.9	1203.7	1203.6	1203.5	1206.3
20°	1173.2	1175.1	1177.0	1178.8	1180.7	1182.0	1182.6	1183.2	1183.8	1184.5	1187.2
22.5°	1149.7	1151.6	1153.4	1155.3	1157.2	1158.5	1159.4	1160.3	1161.1	1162.0	1165.6
25°	1107.3	1110.4	1113.6	1116.7	1119.8	1121.8	1122.8	1123.6	1124.6	1125.5	1129.6
27.5°	1064.7	1068.3	1071.8	1075.4	1078.9	1081.7	1083.7	1085.7	1087.7	1089.7	1093.1
30°	1034.5	1038.5	1042.5	1046.6	1050.6	1053.9	1056.4	1058.9	1061.4	1063.9	1067.6
32.5°	1000.8	1005.3	1009.9	1014.4	1019.0	1022.9	1026.1	1029.4	1032.6	1035.8	1039.8
35°	953.1	958.1	963.1	968.1	973.1	977.6	981.7	985.7	989.7	993.8	998.4
37.5°	902.7	908.3	913.9	919.5	925.1	930.4	935.4	940.4	945.4	950.4	955.6
40°	869.1	874.7	880.3	885.8	891.4	897.4	903.7	909.8	916.1	922.3	927.6
42.5°	832.1	838.9	845.8	852.6	859.4	866.1	872.6	879.0	885.6	892.1	897.9
45°	779.4	786.8	794.2	801.7	809.2	816.9	824.7	832.4	840.3	848.0	853.9
47.5°	724.1	732.5	741.0	749.6	758.0	766.7	775.6	784.5	793.4	802.4	809.0
50°	688.2	697.0	705.7	714.3	723.1	732.3	742.0	751.6	761.3	770.9	778.1
52.5°	650.1	659.3	668.5	677.8	687.0	697.0	707.6	718.2	728.9	739.5	747.0
55°	594.3	604.6	614.8	625.2	635.4	646.1	657.4	668.6	679.8	691.1	699.5
57.5°	539.9	550.6	561.3	572.0	582.8	594.3	606.5	618.8	631.1	643.4	651.8
60°	501.8	513.0	524.2	535.5	546.6	558.7	571.4	584.2	597.0	609.8	618.5
62.5°	465.9	477.4	488.8	500.3	511.8	524.2	537.8	551.3	564.8	578.4	587.0
65°	410.7	422.8	435.0	447.1	459.3	472.3	485.9	499.6	513.4	527.0	536.4
67.5°	354.6	367.6	380.4	393.3	406.2	419.6	433.5	447.5	461.5	475.5	485.6
70°	315.4	328.8	342.1	355.5	369.0	383.2	398.1	413.0	428.0	442.9	452.9
72.5°	279.5	292.9	306.3	319.7	333.1	347.5	362.9	378.4	393.9	409.3	419.5
75°	222.8	237.6	252.2	266.8	281.4	296.5	312.1	327.7	343.2	358.8	369.1
77.5°	173.5	188.3	203.0	217.8	232.6	247.8	263.5	279.2	294.9	310.6	321.5
80°	138.8	154.0	169.3	184.6	199.8	215.5	231.8	248.0	264.1	280.4	291.0
82.5°	108.5	124.0	139.6	155.1	170.5	186.5	203.0	219.5	235.9	252.3	262.9
85°	68.7	84.3	99.9	115.4	131.0	147.0	163.5	180.0	196.5	213.0	223.6
87.5°	37.6	53.5	69.4	85.4	101.3	117.3	133.8	150.2	166.6	183.1	193.4
90°	20.0	37.0	54.1	72.1	89.1	106.4	125.0	143.6	162.1	180.7	190.4
92.5°	28.2	47.3	68.5	89.2	110.5	138.3	177.3	231.2	284.4	286.3	263.1
95°	45.7	60.5	82.4	109.7	145.0	193.4	284.4	432.2	593.4	666.6	576.6
97.5°	65.4	77.2	95.9	119.9	153.7	204.0	290.9	455.0	712.9	946.6	1013.1
100°	78.5	89.3	105.6	128.0	159.3	206.2	282.8	428.8	677.3	964.8	1149.2
102.5°	92.3	102.9	117.3	138.1	166.3	209.6	279.6	405.6	628.0	911.9	1149.4
105°	114.5	124.6	137.4	155.6	179.9	218.0	279.5	384.5	566.1	820.7	1084.9
107.5°	136.6	145.6	157.2	174.1	196.3	231.4	286.3	375.2	523.5	739.4	979.7
110°	152.6	160.9	170.9	186.4	207.1	241.0	293.6	373.6	505.4	693.2	914.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	168.3	175.6	184.6	199.0	218.7	251.3	300.4	375.1	492.0	659.4	855.1
115°	189.5	196.8	205.9	218.5	237.4	268.9	313.9	379.4	481.4	621.7	783.2
117.5°	211.8	218.2	225.0	235.4	254.7	283.3	327.3	386.3	473.9	594.8	735.4
120°	226.3	230.6	236.6	247.0	265.6	293.6	336.0	392.5	471.4	581.4	709.5
122.5°	239.9	243.3	248.6	259.0	276.1	305.1	346.2	398.6	471.3	570.8	687.3
125°	257.9	259.7	265.0	274.8	291.7	320.2	360.4	408.7	471.1	555.8	657.5
127.5°	272.7	275.0	281.2	291.0	309.3	337.0	374.5	417.2	472.8	544.1	630.3
130°	281.9	284.3	291.9	302.4	320.7	347.7	383.3	423.4	474.1	536.4	614.4
132.5°	287.9	291.2	299.9	312.6	331.3	357.0	390.7	428.8	474.0	530.1	599.3
135°	300.1	303.4	312.8	325.8	344.2	369.8	400.8	434.5	473.6	520.6	578.7
137.5°	311.6	315.0	324.4	338.4	356.7	379.8	408.2	439.0	472.6	511.9	560.8
140°	318.3	322.7	331.6	345.9	363.6	386.4	413.1	440.8	472.0	506.8	549.7
142.5°	326.8	330.3	339.7	352.2	369.8	390.6	415.9	442.0	470.4	500.8	539.0
145°	340.5	342.9	350.6	363.6	378.4	398.8	421.9	445.9	470.8	497.6	528.5
147.5°	353.0	354.6	362.5	374.0	388.6	406.1	427.2	448.8	470.8	494.2	519.3
150°	362.3	363.2	370.2	381.8	394.3	410.4	430.8	449.5	470.8	491.3	513.5
152.5°	371.5	371.7	378.8	389.0	400.0	415.4	432.9	450.9	468.7	487.8	507.9
155°	385.4	385.4	390.7	399.7	409.5	421.9	437.0	451.3	466.4	481.5	499.4
157.5°	396.5	397.2	401.4	409.3	417.6	427.2	439.3	452.2	463.4	476.0	489.7
160°	405.0	405.0	408.6	415.6	421.9	430.8	441.5	452.2	462.0	471.7	483.3
162.5°	411.4	411.4	414.3	419.9	425.4	432.9	442.2	451.5	459.1	467.4	476.9
165°	421.0	420.1	421.9	426.3	429.9	436.1	443.3	449.5	454.9	461.1	468.1
167.5°	428.3	427.2	428.1	431.5	434.0	437.9	443.1	448.1	450.6	454.7	459.9
170°	432.6	430.8	431.7	434.4	436.1	437.9	442.4	445.9	447.7	450.4	454.9
172.5°	435.4	434.4	434.5	436.5	437.6	438.6	442.4	445.2	445.6	446.8	449.9
175°	438.8	437.9	437.0	438.8	438.8	439.7	441.5	443.3	442.4	442.4	444.2
177.5°	440.4	439.7	439.0	439.7	439.7	439.7	440.4	441.8	440.4	439.7	440.4
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1284.0	1286.0	1288.0	1288.9	1288.6	1288.3	1288.1	1287.9
5°	1281.9	1284.4	1286.9	1288.0	1287.7	1287.4	1287.1	1286.7
7.5°	1274.2	1277.3	1280.4	1281.8	1281.4	1281.0	1280.7	1280.3
10°	1266.3	1269.4	1272.6	1273.8	1273.2	1272.6	1271.9	1271.3
12.5°	1255.8	1258.6	1261.5	1262.6	1261.9	1261.3	1260.7	1260.1
15°	1235.5	1238.6	1241.7	1243.1	1242.9	1242.5	1242.2	1241.9
17.5°	1209.1	1211.9	1214.7	1215.8	1215.5	1215.0	1214.6	1214.2
20°	1190.0	1192.8	1195.6	1197.2	1197.5	1197.8	1198.1	1198.5
22.5°	1169.1	1172.7	1176.2	1177.9	1177.7	1177.5	1177.3	1177.1
25°	1133.6	1137.7	1141.7	1143.8	1143.8	1143.8	1143.8	1143.8
27.5°	1096.6	1100.1	1103.6	1105.5	1105.7	1106.0	1106.3	1106.5
30°	1071.4	1075.1	1078.8	1080.7	1080.7	1080.7	1080.7	1080.7
32.5°	1043.8	1047.8	1051.8	1054.2	1054.9	1055.7	1056.4	1057.1
35°	1003.2	1007.8	1012.4	1015.5	1016.7	1018.0	1019.2	1020.4
37.5°	960.9	966.3	971.5	974.6	975.7	976.7	977.7	978.7
40°	932.9	938.2	943.5	946.7	948.0	949.2	950.5	951.7
42.5°	903.7	909.5	915.3	919.0	920.7	922.5	924.2	926.0
45°	859.9	865.8	871.7	875.9	878.4	880.9	883.4	885.8
47.5°	815.6	822.3	829.0	833.3	835.2	837.1	839.1	841.0
50°	785.2	792.5	799.6	804.2	806.5	808.6	810.8	813.0
52.5°	754.4	761.8	769.2	774.3	776.9	779.6	782.3	785.0
55°	707.8	716.2	724.7	730.1	732.6	735.1	737.6	740.1
57.5°	660.3	668.8	677.3	683.0	685.9	688.8	691.8	694.6
60°	627.1	635.9	644.6	650.7	654.2	657.5	660.9	664.4
62.5°	595.8	604.5	613.2	619.2	622.3	625.5	628.7	631.9
65°	545.7	555.1	564.5	570.6	573.7	576.8	580.0	583.1
67.5°	495.9	506.1	516.3	522.7	525.4	528.0	530.6	533.2
70°	462.9	472.9	482.8	489.4	492.5	495.6	498.6	501.8
72.5°	429.7	440.0	450.1	456.8	459.9	463.1	466.2	469.3
75°	379.4	389.7	399.9	407.0	410.7	414.5	418.2	421.9
77.5°	332.3	343.1	354.0	360.8	363.7	366.6	369.4	372.3
80°	301.5	312.1	322.7	329.6	332.7	335.8	338.9	342.0
82.5°	273.5	284.1	294.6	301.5	304.6	307.7	310.9	314.0
85°	234.3	244.9	255.4	262.3	265.4	268.5	271.6	274.7
87.5°	204.2	215.0	225.8	232.9	235.9	239.2	242.5	245.4
90°	201.8	213.3	224.8	233.4	235.7	239.7	243.6	245.8
92.5°	245.0	239.9	243.3	245.3	246.6	246.7	250.5	251.7
95°	478.5	385.0	347.4	321.7	307.9	303.0	300.0	299.5
97.5°	946.0	796.3	690.8	590.5	528.0	491.0	470.1	465.6
100°	1189.5	1126.3	1031.3	911.0	824.1	762.3	730.7	734.7
102.5°	1265.5	1272.0	1220.0	1145.9	1079.1	1030.7	1004.8	987.5
105°	1279.7	1377.4	1403.0	1385.6	1347.6	1316.5	1290.8	1289.1
107.5°	1199.0	1351.9	1438.2	1475.4	1478.9	1470.3	1463.4	1457.9
110°	1126.0	1297.8	1418.1	1485.7	1513.1	1522.7	1523.4	1524.1





TEST NUMBER: P332077-940

CATALOG NUMBER: S123DIP-S1165D1025U940-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1052.5	1227.7	1361.2	1446.6	1495.0	1519.7	1529.3	1532.3
115°	955.3	1117.7	1256.0	1358.0	1427.2	1468.9	1489.2	1496.1
117.5°	881.8	1022.9	1147.8	1251.2	1323.2	1370.5	1398.6	1407.0
120°	842.2	969.6	1083.5	1178.1	1250.6	1302.6	1326.2	1333.7
122.5°	809.8	925.5	1031.4	1119.4	1184.1	1231.1	1256.8	1265.7
125°	765.5	869.2	961.1	1036.7	1095.8	1137.2	1161.6	1170.0
127.5°	725.8	818.5	901.7	970.6	1023.5	1059.1	1081.3	1089.1
130°	700.4	786.5	864.5	928.9	977.9	1011.8	1032.4	1041.4
132.5°	676.5	755.9	828.7	890.3	936.7	970.9	989.5	996.7
135°	644.0	712.7	776.2	830.5	875.7	904.0	921.6	929.3
137.5°	613.9	670.7	725.5	772.7	810.9	839.5	854.6	860.2
140°	596.2	646.2	693.7	735.0	770.4	796.9	812.7	813.3
142.5°	578.6	621.8	663.0	699.1	729.5	753.1	767.5	768.2
145°	559.5	591.4	622.3	650.1	673.5	693.5	701.9	704.9
147.5°	544.1	568.2	591.8	611.2	629.2	642.9	650.9	652.6
150°	534.0	554.6	573.2	590.4	604.4	614.8	620.8	621.4
152.5°	526.2	543.9	560.4	574.5	585.1	594.3	597.7	597.8
155°	514.4	528.7	542.1	552.8	560.8	567.8	569.6	570.5
157.5°	502.0	513.9	524.2	532.6	539.6	544.9	546.4	546.2
160°	494.9	504.7	513.5	519.8	526.0	531.4	531.4	530.5
162.5°	486.3	494.7	502.9	508.5	512.6	517.1	517.1	516.2
165°	475.3	480.6	486.9	491.3	494.9	498.5	497.6	497.6
167.5°	465.7	469.8	473.3	476.5	478.1	480.6	479.7	479.7
170°	459.3	462.0	465.5	467.3	468.1	469.9	469.0	469.0
172.5°	453.6	455.6	458.4	459.5	459.7	461.5	459.9	459.1
175°	445.9	446.8	448.6	448.6	448.6	449.5	448.6	447.7
177.5°	441.1	441.8	442.6	442.6	441.8	442.6	441.1	441.1
180°	439.7	439.7	439.7	439.7	439.7	439.7	439.7	439.7

(END OF REPORT)